

IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for Conservation

Revised and updated 2nd Edition Vol. I



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**Second Edition: Revised and Updated
Volume I**

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DELHI



In the National Capital Region only Okhla Bird Sanctuary qualifies IBA criteria. Yamuna Biodiversity Park and Delhi Zoo also attract many birds, but their population does not reach more than 20,000 waterbirds

Delhi (28° 25' to 28° 52' N and 76° 50' to 77° 21' E) is the capital of India. It has an area of 1,483,00 ha. The State is divided into two main ecological zones, an extension of the Aravalli Hills and the Plains. The Yamuna river, where a large number of waterbirds congregate during winter, is the main source of water.

Delhi experiences extreme temperatures. The winter temperatures can fall as low as 2 °C, while the mercury soars to an uncomfortable 48 °C in the summer. Delhi falls in a semi-arid zone, so the rainfall is low, reaching a maximum of 600 mm.

The human population of the State increased from 13.78 million in 2001 to 16.78 million in 2011 (2001 and 2011 census) with a density of 11,320 persons per sq. km., which is the highest density in the country. The urban population is 97.5% and the rural population 2.5%.

Vegetation

Despite dense human population, Delhi does have some natural forests, especially on what is known as the Ridge. The forest type is Tropical Dry Deciduous. The total recorded forest area reduced from 8,500 ha to 8,150 ha. The reserved forest is 7,800 ha., and the protected and

other forests cover 700 ha. The main forest occurs in the southeastern districts of the State, where mainly dense and open forests are found (Ministry of Environment and Forests 2001 and 2013).

IBAs AND PROTECTED AREAS

Delhi has a fully notified Asola-Bhatti Wildlife Sanctuary spread over about 2,760 ha. It was notified in 1986. However, this Sanctuary does not meet any IBA criteria. Delhi is divided into nine districts, two of which (the Northeast and East) are situated on the banks of the River Yamuna. This part of the Yamuna is important for migratory waterbirds, along with the Okhla barrage, which extends to the Okhla Wildlife Sanctuary in Uttar Pradesh, identified as Important Bird Area.

The Uttar Pradesh (UP) side of Okhla has already been declared as a bird sanctuary and lies on the border of Delhi in Gautam Buddha Nagar district near Okhla village. This Sanctuary comes under the Irrigation Department (Uttar Pradesh). On May 8, 1990 the UP Government declared 4000 ha of land as protected area for a bird sanctuary under the Wildlife (Protection) Act, 1972.

IBA site code	IBA site name	IBA criteria
IN-DL-01	Okhla Bird Sanctuary	A1, A4iii

AVIFAUNA

Despite its dense human population, Delhi is a birdwatcher's paradise, thanks to old avenue trees, a large number of parks, historical monuments with gardens, colonial bungalows with large lawns, and the famous Delhi Ridge. More than 400 species of birds have been identified till now (Devasar 2002), including some rare ones such as the Spot-billed Pelican *Pelecanus philippensis*, Lesser Adjutant *Leptoptilos javanicus* and Indian Skimmer *Rynchops albicollis*. The Delhi Region also has a very active Delhi Bird Club, whose members regularly go bird-watching and add new species to the checklist.

Kelsey (2004) while birdwatching near the Yamuna River, south of Okhla, sighted a stocky lark which was immediately identified as Horned Lark *Eremophila alpestris*. In India it is common in the high altitude of Ladakh, particularly above 4,000 m, wintering down to about 3,000 m. This is the first record for Delhi. Praveen (2007) mentions sighting of two threatened species Red-headed Falcon *Falco chicquera* and Laggar Falcon *Falco jugger* from Delhi region. Robson (2014) mentions sighting of Spotted Crake *Porzana porzana*, photographed at Basai, Delhi. This is the second variable record of the bird from this region.

List of threatened birds with IBA site codes

CRITICALLY ENDANGERED		
Baer's Pochard (Stray record)	<i>Aythya baeri</i>	IN-DL-01
White-rumped Vulture (old record)	<i>Gyps bengalensis</i>	IN-DL-01
Long-billed Vulture (old record)	<i>Gyps indicus</i>	IN-DL-01
Sociable Lapwing (Stray record)	<i>Vanellus gregarius</i>	IN-DL-01
ENDANGERED		
Egyptian Vulture	<i>Neophron percnopterus</i>	IN-DL-01
Black-bellied Tern	<i>Sterna acuticauda</i>	IN-DL-01
VULNERABLE		
Dalmatian Pelican	<i>Pelecanus crispus</i>	IN-DL-01
Asian Woollyneck	<i>Ciconia episcopus</i>	IN-DL-01
Lesser Adjutant	<i>Leptoptilos javanicus</i>	IN-DL-01
Pallas's Fish-eagle (Old record)	<i>Haliaeetus leucoryphus</i>	IN-DL-01
Greater Spotted Eagle	<i>Clanga clanga</i>	IN-DL-01
Sarus Crane	<i>Grus antigone</i>	IN-DL-01
Indian Skimmer	<i>Rynchops albicollis</i>	IN-DL-01
Bristled Grassbird	<i>Chaetornis striatus</i>	IN-DL-01
Finn's or Yellow Weaver (Stray record)	<i>Ploceus megarhynchus</i>	IN-DL-01
NEAR THREATENED		
Spot-billed Pelican	<i>Pelecanus philippensis</i>	IN-DL-01
Oriental Darter	<i>Anhinga melanogaster</i>	IN-DL-01
Painted Stork	<i>Mycteria leucocephala</i>	IN-DL-01
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	IN-DL-01
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	IN-DL-01
Ferruginous Duck	<i>Aythya nyroca</i>	IN-DL-01
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>	IN-DL-01
Lesser Fish-Eagle (?)	<i>Ichthyophaga humilis</i>	IN-DL-01
Great Thick-knee	<i>Esacus recurvirostris</i>	IN-DL-01
River Lapwing	<i>Vanellus duvaucelii</i>	IN-DL-01
Eurasian Curlew	<i>Numenius arquata</i>	IN-DL-01
Black-tailed Godwit	<i>Limosa limosa</i>	IN-DL-01
River Tern	<i>Sterna aurantia</i>	IN-DL-01
Alexandrine Parakeet	<i>Psittacula eupatria</i>	IN-DL-01

THREATS AND CONSERVATION ISSUES

Despite the fact that Delhi has a very high human density of more than 9,000 per sq. km., it still retains some forest cover, especially in the Ridge area. The Delhi Development Authority (DDA) and the Delhi University have developed a biodiversity park of nearly 200 acres at Wazirabad, to which recently the Lt. Governor of Delhi has ordered an addition of another 300 acres of land. The existing 200 acres have dry ecosystems, while the addition will mostly have aquatic habitat along the banks of the River Yamuna. This biodiversity park is supposed to be part of a bird sanctuary spread over 800 acres in the area.

The Delhi Tourism and Transport Development Corporation (DTTDC) has proposed the development of a bird sanctuary in the Najafgarh area of Southwest Delhi. The sanctuary will cover an area of several kilometres along the Najafgarh drain and a large number of trees are to be planted to form a thick forest belt. The Indian National Trust for Art and Cultural Heritage (INTACH) had been appointed as a consultant for the project.

The 7,777 ha Delhi Ridge forest has been under constant threat for several decades from development pressures, including construction of roads, armed forces activities, conversion to parks, development of housing colonies and slums. Pressure from environmental organisations over several years has resulted in some level of protection, including declaration of the Delhi Ridge as a Reserve Forest. The Supreme Court has ordered the Delhi Government to free the Ridge of all encroachments. However, in the several months since the judgement, most of the major occupations by the government/private agencies have continued, while the authorities have moved quickly to evict poor slum dwellers and villagers. The affected population, running into several thousands, primarily comprises construction worker families who have been living in these colonies for over twenty years. While some alternate area has been identified, this also appears to be a part of the Ridge, though not in its legally notified part. Mostly ravine the site is in any case unfit for habitation.

The people have now organised themselves, with help from members of the National Alliance of People's Movements, under the banner of Gram Bachao Sangharsh Samiti, to oppose their forced eviction. Environmental groups like Kalpavriksh, Srishti, Vatavaran, WWF-I (Delhi-Haryana State Unit) and the Development Research and Action Group (DRAG) have supported their struggle; they have asked for the removal of the bigger destroyers (including the Indian Army) first, a negotiated settlement with the villagers, and

an investigation on why luxury farmhouses adjacent to the villages have not been targeted for eviction.

The 132 Infantry Battalion (Ecology) of the Territorial Army is presently working on the restoration of the mines in the Asola-Bhatti Wildlife Sanctuary in Delhi. The forest that is being resurrected in the Bhatti mines is to be called the Kargil Martyrs' Memorial Forest. One hundred thousand saplings have already been planted and an additional hundred thousand will be planted in the period up to March 2003.

At the same time, there is a proposal to denotify the Asola Wildlife Sanctuary and use the Bhatti mines as a landfill for the garbage that is generated by the city of Delhi. An estimated 6000-7000 tonnes of garbage is generated daily in Delhi and the city is reported to be fast running out of landfills to deal with it. It is estimated that by the year 2021 Delhi will be generating around 20,000 tonnes of garbage every day, and it is to meet this need that the 1000 ha Bhatti mines are to be converted into a landfill. Illegal sand mining is a major problem in the Asola-Bhatti Wildlife Sanctuary. It takes place in an area of over 6,500 acres on the Haryana-Delhi border, including the Sanctuary area.

The only IBA of Delhi, the Okhla Wildlife Sanctuary, is not protected properly. The construction of a proposed flyover near the Sanctuary would affect it negatively, at least during the construction period. However, the bigger problems are pollution and encroachment (Urfi 1993). Due to rapid urbanization all around, the Okhla Bird Sanctuary is becoming an island. The wintering ducks at Okhla are dependent upon the surrounding areas, especially the grassy patches, crop fields and marshes around the barrage for feeding. As more and more areas around the barrage are built up, these habitats are disappearing and so it is important to develop a buffer zone around the Sanctuary (Urfi 2003).

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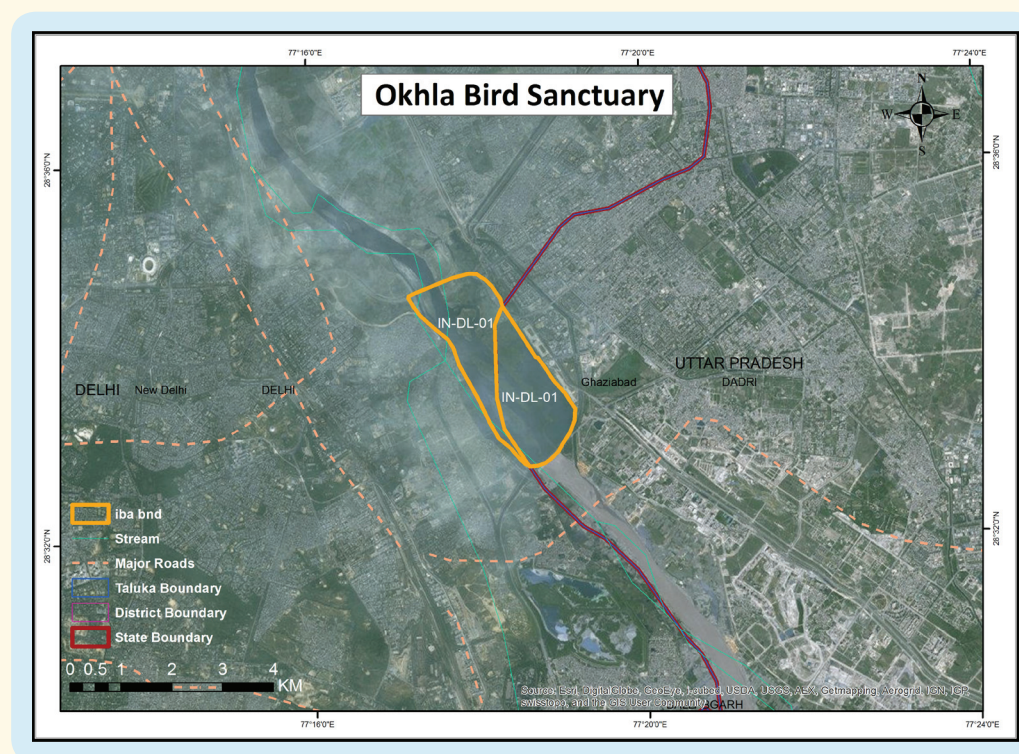
OKHLA BIRD SANCTUARY

IN-DL-01

IBA Site Code	: IN-DL-01	Area	: 400 ha
Administrative Region (State)	: Delhi, Uttar Pradesh	Altitude	: 200 msl
District	: Gautam Buddh Nagar	Rainfall	: 660–670 mm
Coordinates	: 28° 33' 00" N, 77° 17' 60" E	Temperature	: 4 °C to 46 °C
Ownership	: State	Biogeographic Zone	: Semi-arid
		Habitat	: Freshwater Swamp

IBA CRITERIA: A1 (Threatened species), A4iii (≥20,000 waterbirds)

PROTECTION STATUS: Bird Sanctuary, established May, 1990.



GENERAL DESCRIPTION

Delhi and the neighbouring state of Uttar Pradesh harbour a huge wetland refuge for birds. The site is located at the point where the River Yamuna leaves the territory of Delhi and enters the neighbouring state of Uttar Pradesh. The most prominent feature of the sanctuary is a large lake created by damming the river, which lies between Okhla village towards the west and Gautam Buddh Nagar towards the east (Urfi 2003). So rich is this stretch of the river in avian diversity that it could well qualify as a Ramsar wetland of international importance. However, various development activities such as the construction of the NOIDA-Delhi freeway have encroached on prime habitats of several birds.

The Uttar Pradesh (UP) side of Okhla has already been declared a bird sanctuary. This sanctuary is under the

administrative purview of the Irrigation Department. The aquatic vegetation of this stretch of River Yamuna has been described by Gopal & Sah (1993). *Typha* and *Phragmites* reed beds are abundant, especially during the monsoon. Patches of Water Hyacinth *Eichhornia crassipes* form dense mats. *Salvinia* is also found. The common tree species are *Acacia nilotica*, *Acacia modesta*, *Albizia lebbek*, *Dalbergia sissoo*, *Ziziphus mauritiana*, *Ficus bengalensis*, and *F. glomerata*.

AVIFAUNA

Since the creation of a barrage on the river in 1986, and the resultant waterbody, the birdlife has increased tremendously. Urfi (2003) compiled a list of 302 bird species from this site. An additional 27 species were listed by Harris (2001) as probable, and they need confirmation. Tarun K. Roy (*pers. comm.* 2014) has compiled a list of 330 bird species from Okhla.



Okhla is one of the foraging areas of Painted Stork *Mycteria leucocephala* which breeds in Delhi Zoo and other nearby areas

During winter, between 14,000 and 20,000 waterbirds are recorded. This site qualifies for A4iii criteria (the site is known or thought to hold $\geq 20,000$ waterbirds). However, due to a boom in realty construction during the last 10 years, cutting of tall trees to build monuments in the name of leaders, and general disturbances, the number of birds has reduced. According to Nikhil Devasar (*pers. comm.* 2013) not more than 5,000 waterfowl are now seen in Okhla Bird Sanctuary.

The Okhla birdlist includes three Critically Endangered (CR), two Endangered (EN), 10 Vulnerable (VU), and 13 Near Threatened (NT) species. Some species, such as Baikal Teal *Anas formosa*, Grey-headed Fish-eagle *Ichthyophaga ichthyaetus*, and Bristled Grassbird *Chaetornis striatus* have not been seen in recent years (see Urfi 2003 for details).

Among the resident birds listed in the Table, which are of much greater concern to us than vagrant migrants, the Sarus Crane *Grus antigone* has declined all over India during the last two decades (BirdLife International 2001). Prior to 1992, pairs were sighted sporadically from the agricultural fields and marshes outlying Okhla Lake area. One such area has now been destroyed by a newly built motorway. Since then, there has been no sighting of Sarus from Okhla (Urfi 2003).

The Indian Skimmer *Rynchops albicollis* that has declined all over its range (BirdLife International 2001), was found frequently in summer in the Yamuna river system in the mid 1970s (Ganguli 1975), but now it became a rare visitor to Okhla (Harris 2001), with flocks of up to seven sighted in August 1998, January 2001, and August 2001.

The Lesser Adjutant *Leptoptilos javanicus* has also not been sighted during the last 10 years [1990s or 2000s?]. Urfi (2003) noted six birds in February 1990, but there has been no other recent record (Harris 2001). However, the Near Threatened Black-necked Stork *Ephippiorhynchus asiaticus* is still holding out. Up to five birds were seen in Okhla during 1989–1992 (Urfi 2003), and three birds in September 1990 (Harris 2001). We do not have any new data on these birds.

Records of nest-building activity by the Vulnerable Yellow Weaver or Finn's Baya *Ploceus megarhynchus* has been a topic of discussion. This is a bird of the Terai region of Uttar Pradesh and Assam (Ali & Ripley 1987, Grimmett *et al.* 1998). Rai (1979) recorded it breeding in Hastinapur WLS (an IBA) in Meerut district, which is too far for these birds, and they could have come from there. There has been no recent sighting from Okhla or other areas along the Yamuna river.

The Okhla Barrage is an important feeding ground for the 300–500 Painted Stork *Mycteria leucocephala* that breed in Delhi Zoo (Urfi 1996, 2003).

Several migratory species visit the river in large numbers in winter, with the commonest ducks being the Northern Shoveller *Anas clypeata* and Gadwall *Anas strepera*. The Northern Pintail *Anas acuta* and Ruddy Shelduck *Tadorna ferruginea* are also common. Other common species include the Common Teal *Anas crecca*, Tufted Duck *Aythya fuligula*, Common Pochard *Aythya ferina*, Greylag Goose *Anser anser*, and Bar-headed Goose *Anser indicus*. The resident Spot-billed Duck *Anas poecilorhyncha* is abundant. Garganey *Anas querquedula* is a fairly scarce passage migrant, along

CRITICALLY ENDANGERED

Baer's Pochard	<i>Aythya baeri</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Long-billed Vulture	<i>Gyps indicus</i>
Sociable Lapwing (old record)	<i>Vanellus gregarius</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
Black-bellied Tern	<i>Sterna acuticauda</i>

VULNERABLE

Dalmatian Pelican	<i>Pelecanus crispus</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Asian Woollyneck	<i>Ciconia episcopus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucorhynchus</i>
Greater Spotted-eagle	<i>Clanga clanga</i>
Sarus Crane	<i>Grus antigone</i>
Indian Skimmer	<i>Rynchops albicollis</i>
Bristled Grassbird	<i>Chaetornis striatus</i>
Yellow Weaver (old record)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Painted Stork	<i>Mycteria leucocephala</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
Great Stone-Plover	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Eurasian Curlew	<i>Numenius arquata</i>
Black-tailed Godwit	<i>Limosa limosa</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

with the Common Shelduck *Tadorna tadorna*, Comb Duck *Sarkidiornis melanotos*, and Indian Cotton Teal or Pygmy Goose *Nettapus coromandelianus*. Red-crested Pochard *Rhodonessa rufina* and Mallard *Anas platyrhynchos* occur in small numbers. Other species that have occasionally been seen in the area include the Black Bittern *Ixobrychus flavicollis*, Asian Openbill *Anastomus oscitans*, White-necked Stork *Ciconia episcopus*, Large Whistling Duck *Dendrocygna bicolor*, and Ruff *Philomachus pugnax*.

The very rare Bristled Grass-Warbler or Grassbird *Chaetornis striatus* has also been sighted here (Grewal 1996). Yet, the area where the Bristled Grass-warbler was found has been destroyed by the NOIDA toll bridge.

In November 2000, more than 450 Greater Flamingo *Phoenicopterus roseus* were observed and there have been sightings of large flocks of flamingos throughout.

Some other bird species seen are Lesser Whistling Duck *Dendrocygna javanica*, Eurasian Coot *Fulica atra*, Eurasian Spoonbill *Platalea leucorodia*, Pied Avocet *Recurvirostra*

avosetta, Great White Pelican *Pelecanus onocrotalus*. Among the migratory wader species, Ruff *Philomachus pugnax*, Black-tailed Godwit *Limosa limosa*, Common Redshank *Tringa totanus*, River Lapwing *Vanellus duvaucelii*, and sea birds such as Pallas's Gull *Ichthyaeetus ichthyaetus* and large flocks of Brown-headed Gull *Chroicocephalus brunnicephalus*, visit the sanctuary during winter (Roy 2012).

Okhla has been identified as an IBA in view of its rich birdlife and the presence of globally Threatened species such as the Sarus Crane, Bristled Grassbird, Greater Spotted-eagle, and Indian Skimmer.

OTHER KEY FAUNA

There are no large or small mammals of conservation concern in this IBA. On the Delhi side, the sanctuary is surrounded by a bustling market and residential area, while on the Uttar Pradesh side, a few Golden Jackal *Canis aureus* and an occasional Nilgai *Boselaphus tragocamelus* are seen sometimes. Not much is known about the reptile, amphibian, and fish fauna. Nilgai has not been seen for over a decade, mainly due to the development activities all around Okhla Bird Sanctuary.

LAND USE

- Fisheries
- Water management

THREATS AND CONSERVATION ISSUES

- Disturbance to birds
- Poaching of birds
- Water pollution
- Encroachment
- Cultivation
- Public thoroughfare
- Noise pollution
- High tension power lines

Okhla Wildlife Sanctuary has great potential to attract national and international birdwatchers. Its greatest advantage is its easy accessibility and congregations of waterfowl. However, the sanctuary is not protected adequately. Pollution and solid waste is the biggest problem of Okhla wetland. Cleaning the area and protecting the marshes would prove useful for wildlife, but also for the nearly one million humans who rely on the River Yamuna for their water requirements (Urfi 1993).

On the northeastern boundary, a Hanuman Temple has come up, a public road is regularly used, and an ashram is encroaching on the sanctuary land. These are illegal constructions and pose a threat to the bird habitats in the sanctuary (Roy 2012).

Due to heavy siltation, some parts of Okhla Barrage have become considerably shallower. This has permitted the

growth of reeds, particularly at the junction of the weir and the left influx bund, and also in the areas between the spurs (Urfi 2003). In what ways these changes in the water depth will affect the bird communities remains to be seen.

Due to rapid urbanization all around, the Okhla Bird Sanctuary is becoming an island. The wintering ducks at Okhla are dependent upon the surrounding areas, especially grassy patches, crop fields, and marshes around the barrage, for feeding. As more and more areas around the barrage are being built up, these habitats are disappearing, and so it is important to develop a buffer zone around the sanctuary (Urfi 2003).

Untimely drying up of the reservoir by the Irrigation Department for maintenance purposes, as happened in October 2013, when migratory birds start arriving, can be avoided by greater coordination between the Wildlife Department and the Irrigation Department.

An eco-sensitive zone, as suggested by the National Green Tribunal, should be quickly developed around the sanctuary where no new constructions should be allowed. The Forest Department has asked NOIDA Authority to refrain from granting any fresh approval for setting up new cell towers within a one km radius around the sanctuary.

Recently, the Ministry of Environment, Forests and Climate Change circulated a Draft Notification (New Delhi, 24th September, 2014) for a 100 m Eco-sensitive Zone around three sides (eastern, western, southern boundary) and 1.27 km from the northern boundary of Okhla Bird Sanctuary, in the heart of the thickly populated metro city of Delhi.

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